Contributing to openSUSE

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Open Build Service
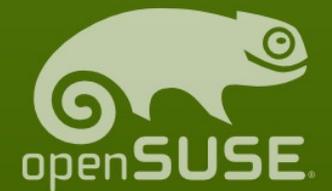
Open Build Service – Architecture
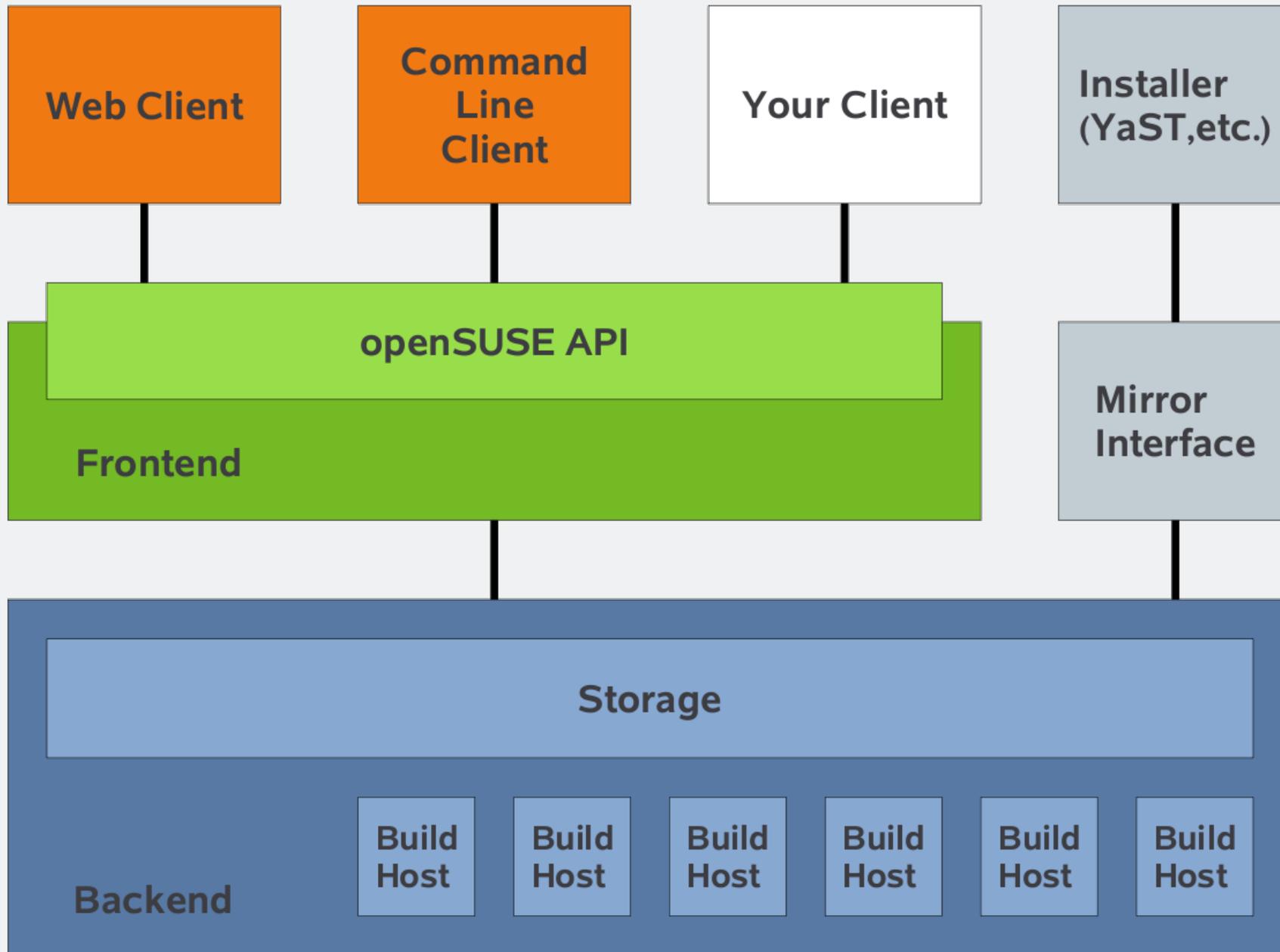
Open Build Service – Architecture – Backend

- source code storage (version control)
- building of binary packages
    - distributed
    - physical or virtualized (XEN, QEMU/KVM)
    - crosscompilation possible (ARM, Win32)
    - every build has its own chroot environment
    - automatic
- multi architecture support
- storage for built packages
- provides process state and build log
- written in Perl

Open Build Service – Architecture
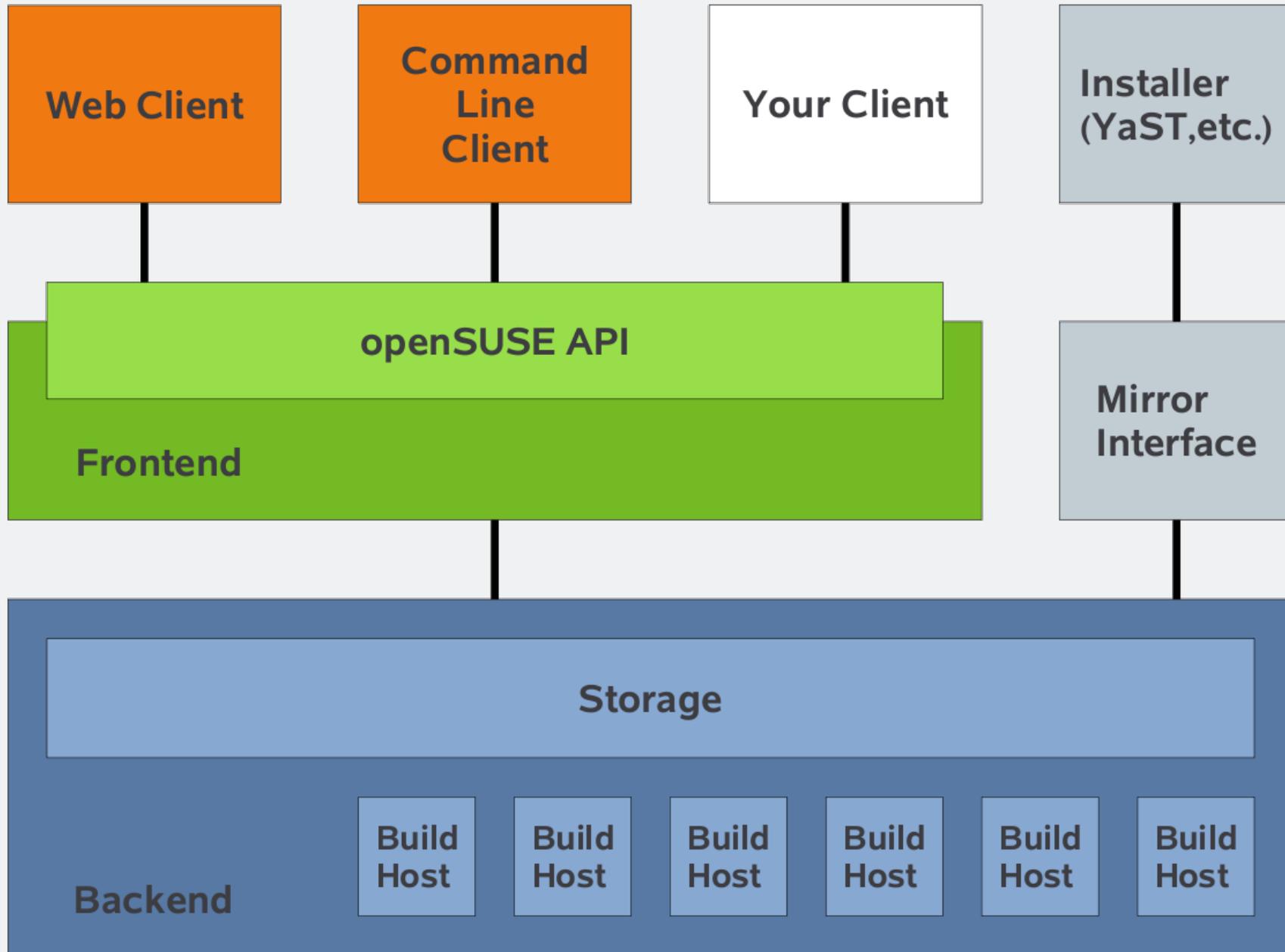
Open Build Service – Architecture – Frontend

- public API for client tools

- access to source codes

- access to process states and build logs

- access to built packages

- control the building process

- user, project, package management

- written in Ruby on Rails

# Open Build Service – Architecture

Web Client

Command Line Client

Your Client

Installer (YaST,etc.)

openSUSE API

Frontend

Mirror Interface

Storage

Backend

Build Host

Build Host

Build Host

Build Host

Build Host

Build Host

openSUSE
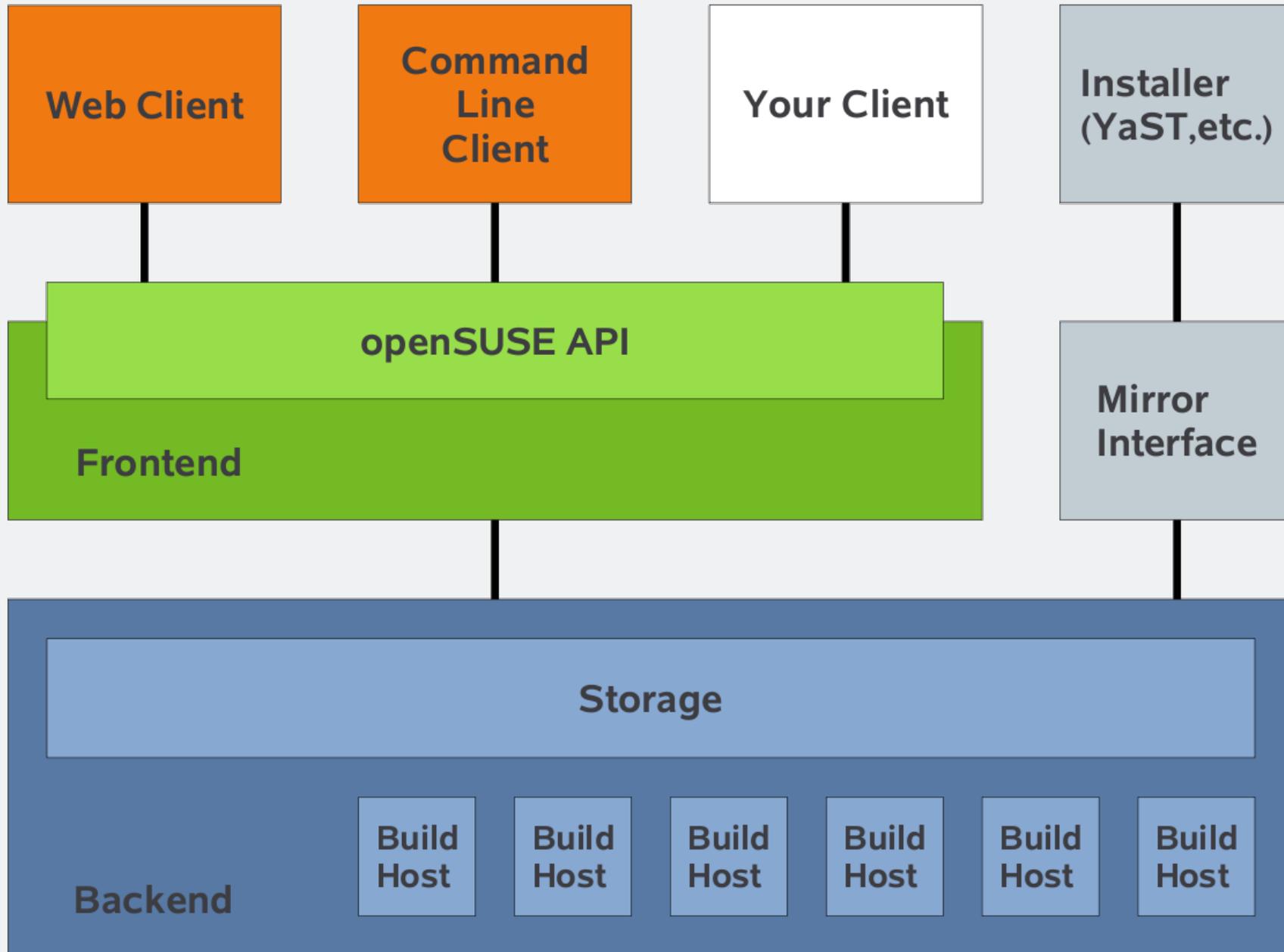
Open Build Service – Architecture – Web UI

- simple listing of projects and packages

- clickable administration

- upload of source files

- editing text files (spec files, patches, changelogs)

- download of built packages

- available at http://build.opensuse.org/

- written in Ruby on Rails

Open Build Service – Architecture
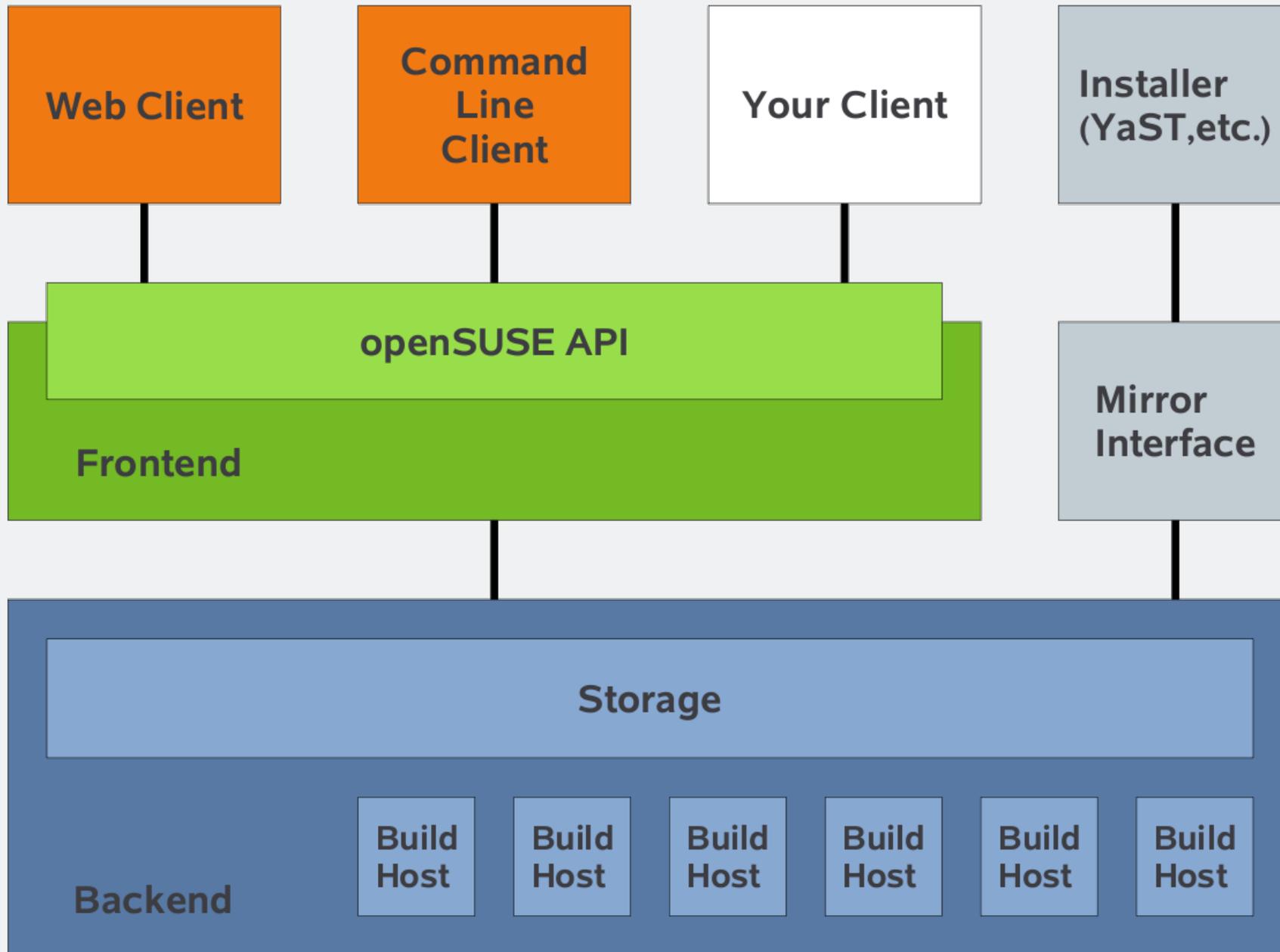
Open Build Service – Architecture – CLI

- officially supported: `osc`

- more advanced tasks

- provides Subversion-like interface

- can build package locally

- written in Python

Open Build Service – Architecture
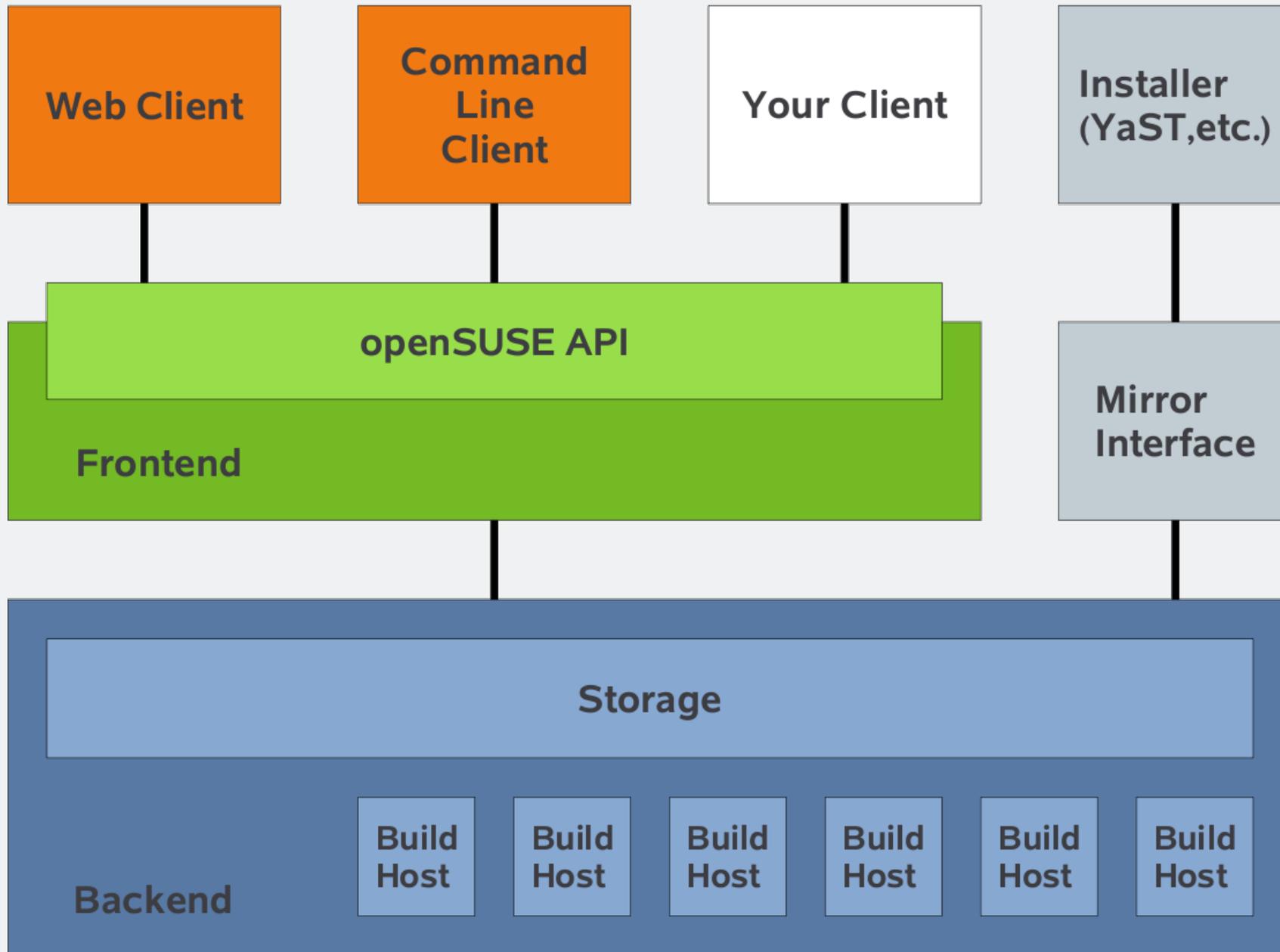
Open Build Service – Architecture – Mirrors

- synchronization with mirrors (rsync, drpmsync)

- metadata for installation sources (rpm-md)

- direct users to best mirrors (using mirrorbrain*)

- search and install packages directly in distribution

  - yast, zypper, yum, …

* http://mirrorbrain.org/

Open Build Service – Distributions

- openSUSE
  - 11.3, 11.4, 12.1, Factory
- SUSE Linux Enterprise
  - SLE 9, SLE 10, SLE 11
- Fedora
- CentOS, Scientific Linux
- Red Hat Enterprise Linux
- Mandriva, Mageia
- Ubuntu
- Debian
- others ...

RPM
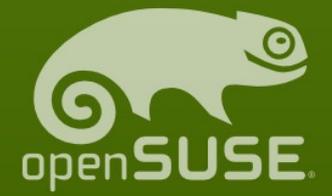
RPM

- Package management system

  - rpm CLI tool, librpm

  - local database (Berkeley DB)

- Binary format

  - Header

  - Signature – GPG/MD5

  - Metadata – name, version, release, architecture, filelist, …

  - File archive – compressed cpio (gzip, bzip2, lzma/xz)

RPM – spec

```
Name:          pv
URL:           http://www.ivarch.com/programs/pv.shtml
License:       Artistic License
Group:         Development/Tools
Version:       1.1.4
Release:       1
Summary:       Pipe Viewer
Source:        %{name}-%{version}.tar.bz2
BuildRequires: gcc make

%description
A terminal-based tool for monitoring the progress of data through a pipeline.

%prep
%setup -q

%build
%configure
make %{?_smp_mflags}

%install
make DESTDIR=%{buildroot} install
%find_lang %{name}

%files -f %{name}.lang
%defattr(-,root,root)
%doc README doc/NEWS doc/TODO doc/COPYING
%{_bindir}/%{name}
%{_mandir}/man1/%{name}.1*
```

Demo!

Open Build Service – Workflow – OSC

- **osc branch** *PROJECT PACKAGE*
- **osc co** *PROJECT PACKAGE*
- hack, hack, hack, …
- **osc ar**
- **osc ci**
- **osc sr**

Open Build Service – Workflow – quilt

- **quilt setup *spec**
- **quilt push -a**
- **quilt new** *foo.patch*
- hack, hack, hack, …
- **quilt edit** *bar.c*
- **quilt refresh**

Resources

- Bugzilla
  - http://bugzilla.novell.com/
- Gitorious
  - http://gitorious.org/opensuse
- GitHub
  - http://github.com/opensuse
- Planet openSUSE
  - http://planet.opensuse.org/
- Wiki
  - http://wiki.opensuse.org/

Communicate!

- IRC – irc.freenode.net
  - #susecz
  - #opensuse-buildservice
  - #opensuse-factory
  - #opensuse-{gnome,kde,xfce,arm,...}
- mailing list
  - opensuse-buildservice@opensuse.org
  - opensuse-factory@opensuse.org
  - opensuse-packaging@opensuse.org
  - opensuse-{gnome,kde,xfce,arm,...}@opensuse.org

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